

**\* NOTICES \***

**JPO and INPIT are not responsible for any damages caused by the use of this translation.**

1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.



# PATENT ABSTRACTS OF JAPAN

(11)Publication number : **04-120775**

(43)Date of publication of application : **21.04.1992**

---

(51)Int.Cl. **H01L 33/00**

---

(21)Application number : **02-241766** (71)Applicant : **HITACHI CABLE LTD**

(22)Date of filing : **12.09.1990** (72)Inventor : **UNNO TSUNEHIRO**

---

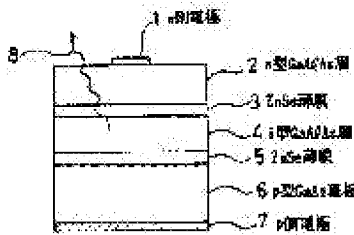
## (54) TUNNEL JUNCTION LIGHT EMITTING ELEMENT

(57)Abstract:

PURPOSE: To grow a light emitting layer having a small number of defects and to raise a light irradiating output to a practical level by composing semiconductor layers to be laminated on a substrate of semiconductors having near lattice constants.

CONSTITUTION: A p-type GaAs layer is grown on a p-type GaAs substrate 6, and a ZnSe thin film 5 having wide forbidden

band width and high resistance is grown thereon. Then, an i-type GaAlAs layer 4 to become a light emitting layer is grown, and a mixed crystal ratio profile is formed of an epitaxial layer. A ZnSe thin film 3 having





wider forbidden band width is grown on the layer 4. The semiconductor material of a light emitting element is formed of GaAs, GaAlAs, ZnSe because the lattice constants of the semiconductors have very near values. Thus, the layer 4 to become the light emitting layer can be grown as the epitaxial layer having small number of defects.